



Marine Life Protection Act Initiative



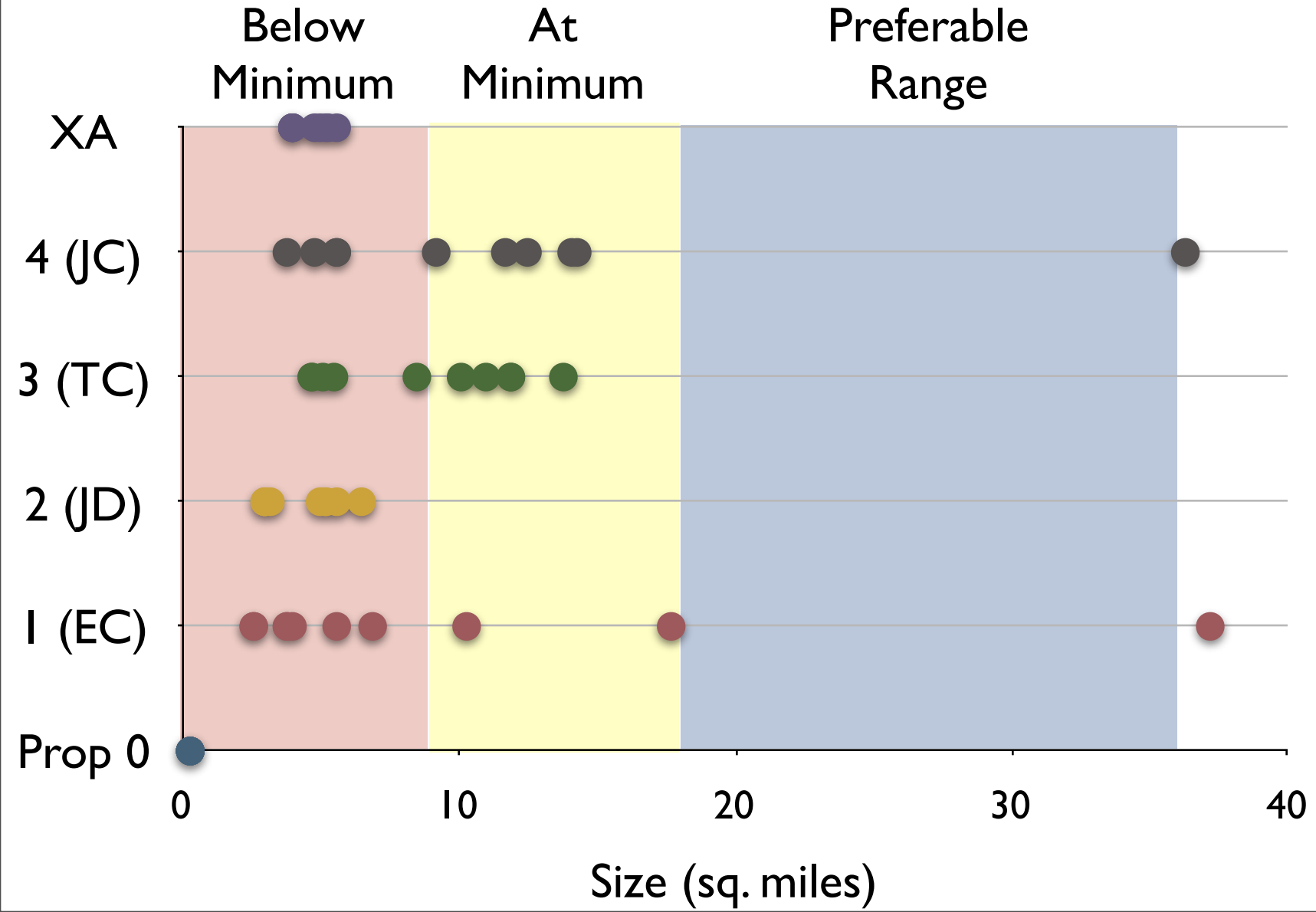
**North Central Coast
Size & Spacing Evaluations
January 23, 2008**



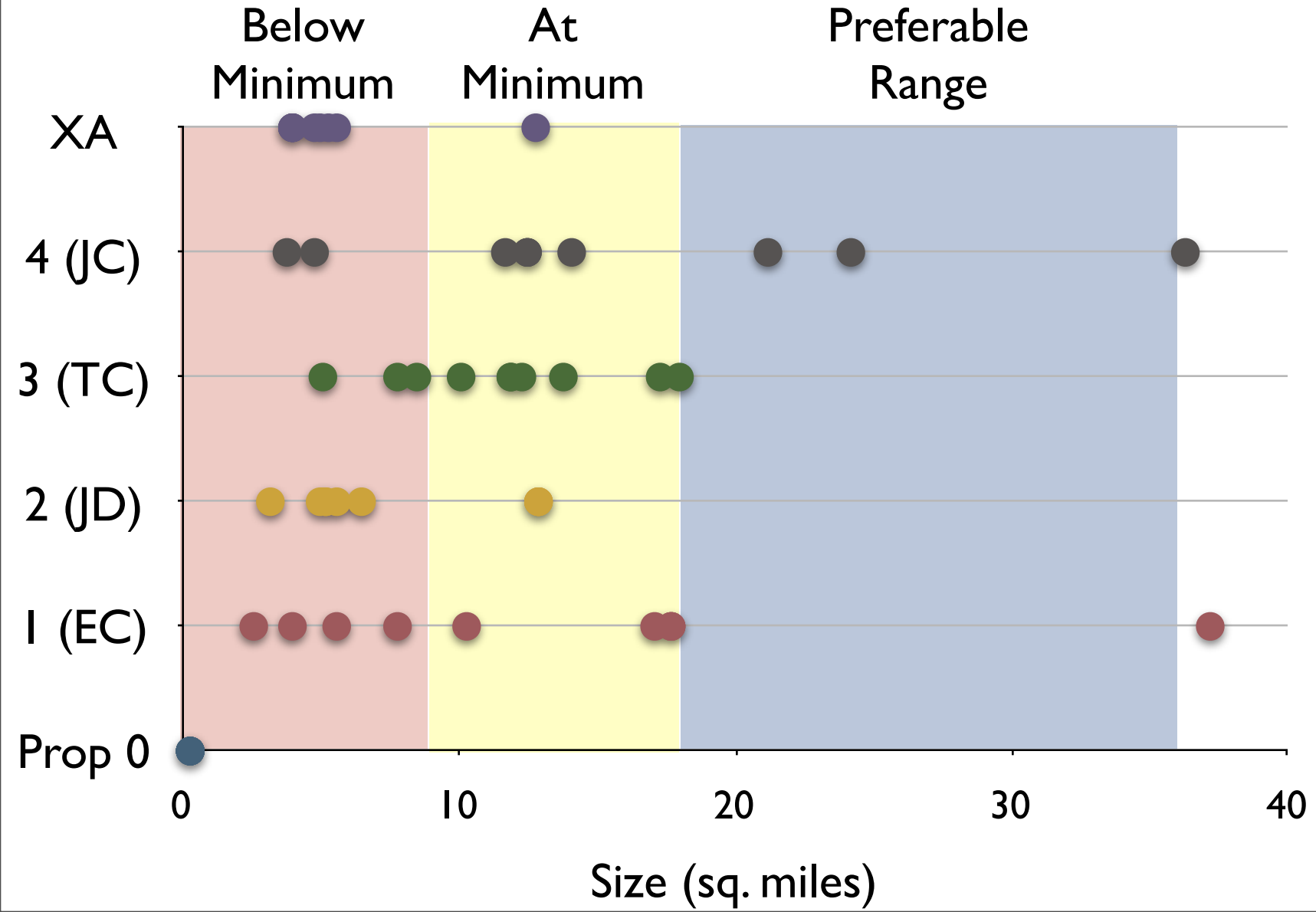
Size Analysis Methods

- Measure individual MPA lengths and area
- Combine contiguous MPAs into single MPA complexes
- Consider level of protection
- Tabulate MPA lengths and areas relative to minimum & preferred guidelines

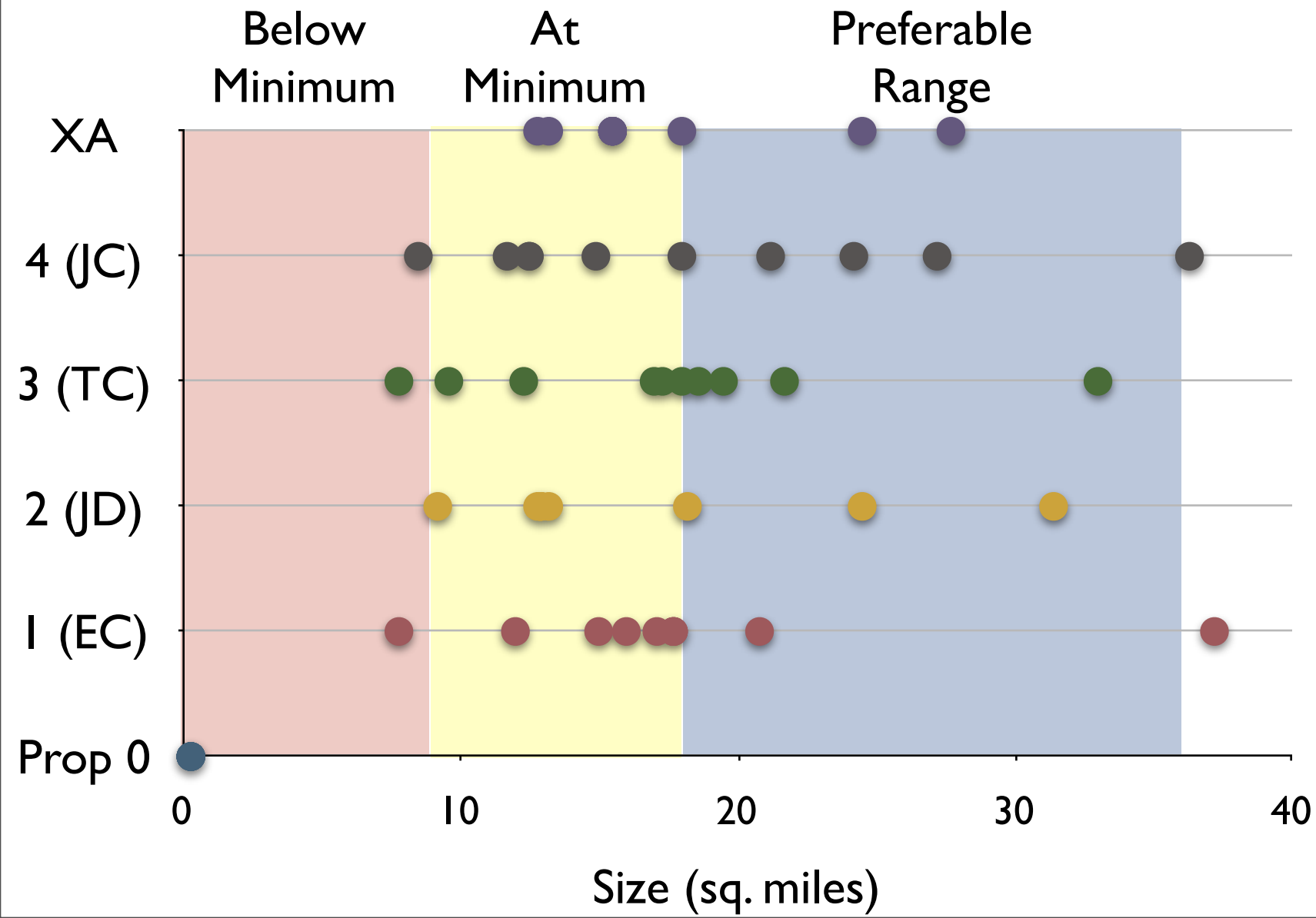
MPA Cluster Sizes (Very High Protection)



MPA Cluster Sizes (High Protection)



MPA Cluster Sizes (Moderately High Protection)





MPA Size Conclusions

With **Very High Protection**:

- Pkgs 4 (67%) is the most consistent with the size guidelines. 4 has one reserve in the preferred size range.
- Pkgs 3 (50%) and 1 (38%) have an intermediate fraction of reserves that meet the size guidelines.
- Pkgs 2 and A have no marine reserves that meet the size guidelines.

With **High Protection**:

- All Pkgs increase the fraction of reserves that meet at least minimum guidelines.
- The ordering of Pkgs remains the same.



MPA Size Conclusions

With **Moderately High Levels of Protection:**

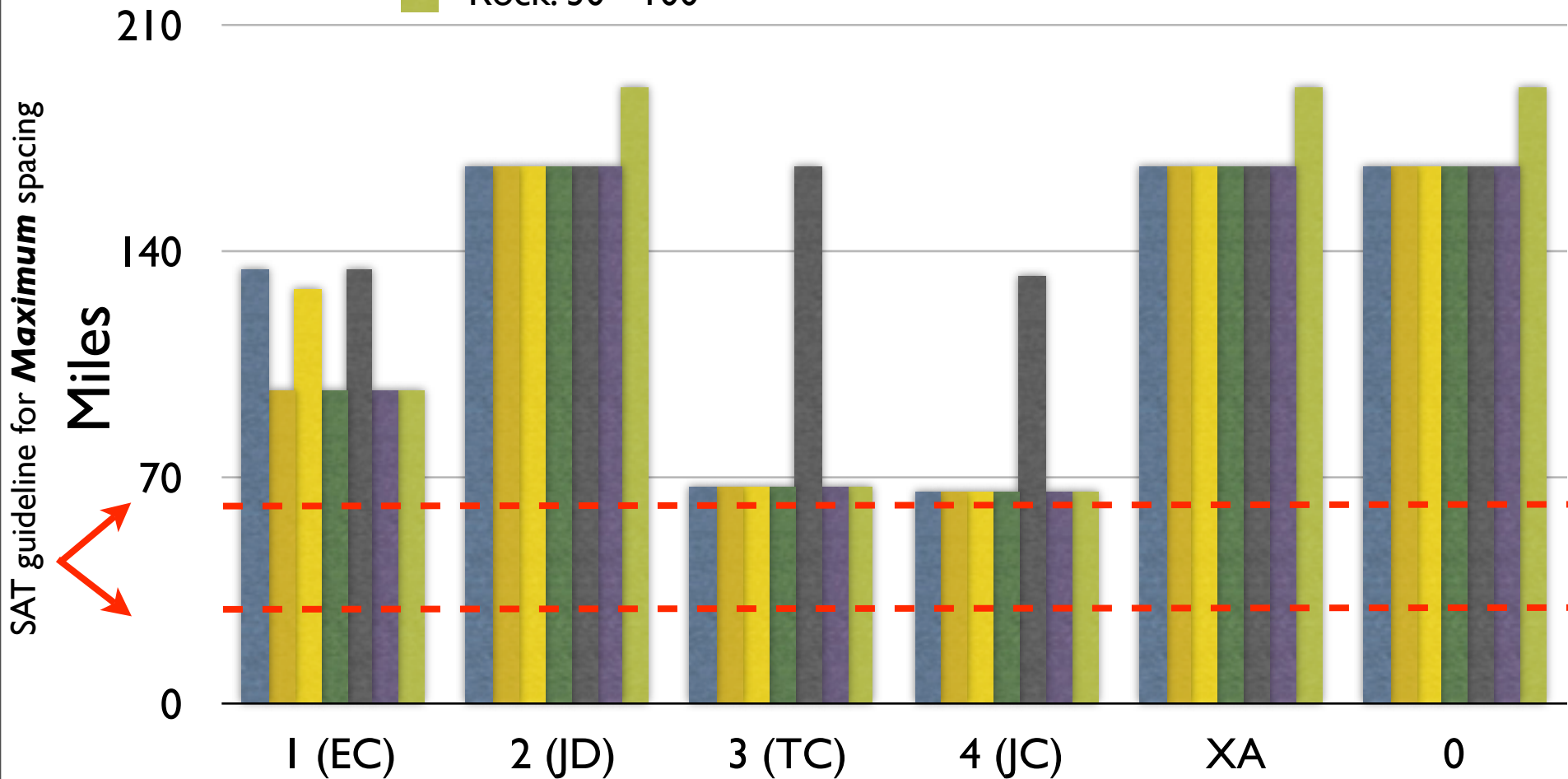
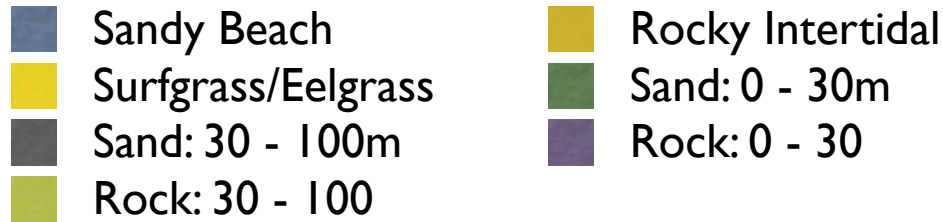
- Nearly all MPA clusters in all packages meet at least the minimum size guidelines.
- Pkgs 4 and 3 have the most MPA clusters in the preferred size range.



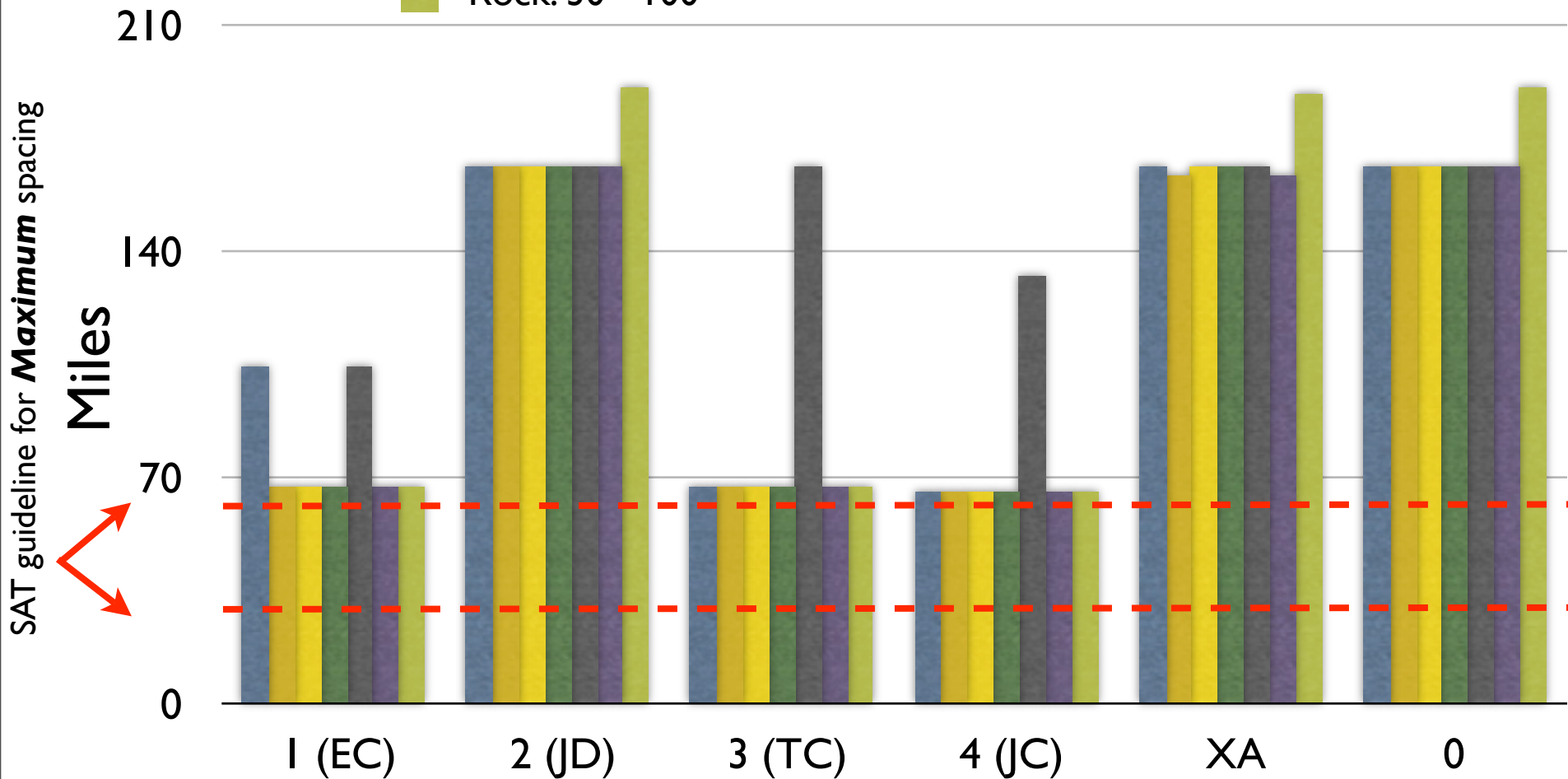
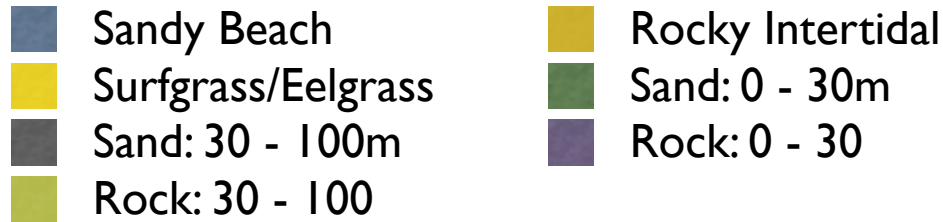
Spacing Analysis Methods

- Characterize each MPA by the habitats included
- For each habitat, measure the gaps between adjacent, high protection MPAs that meet the minimum size guidelines

Maximum Gaps (Very High Protection)

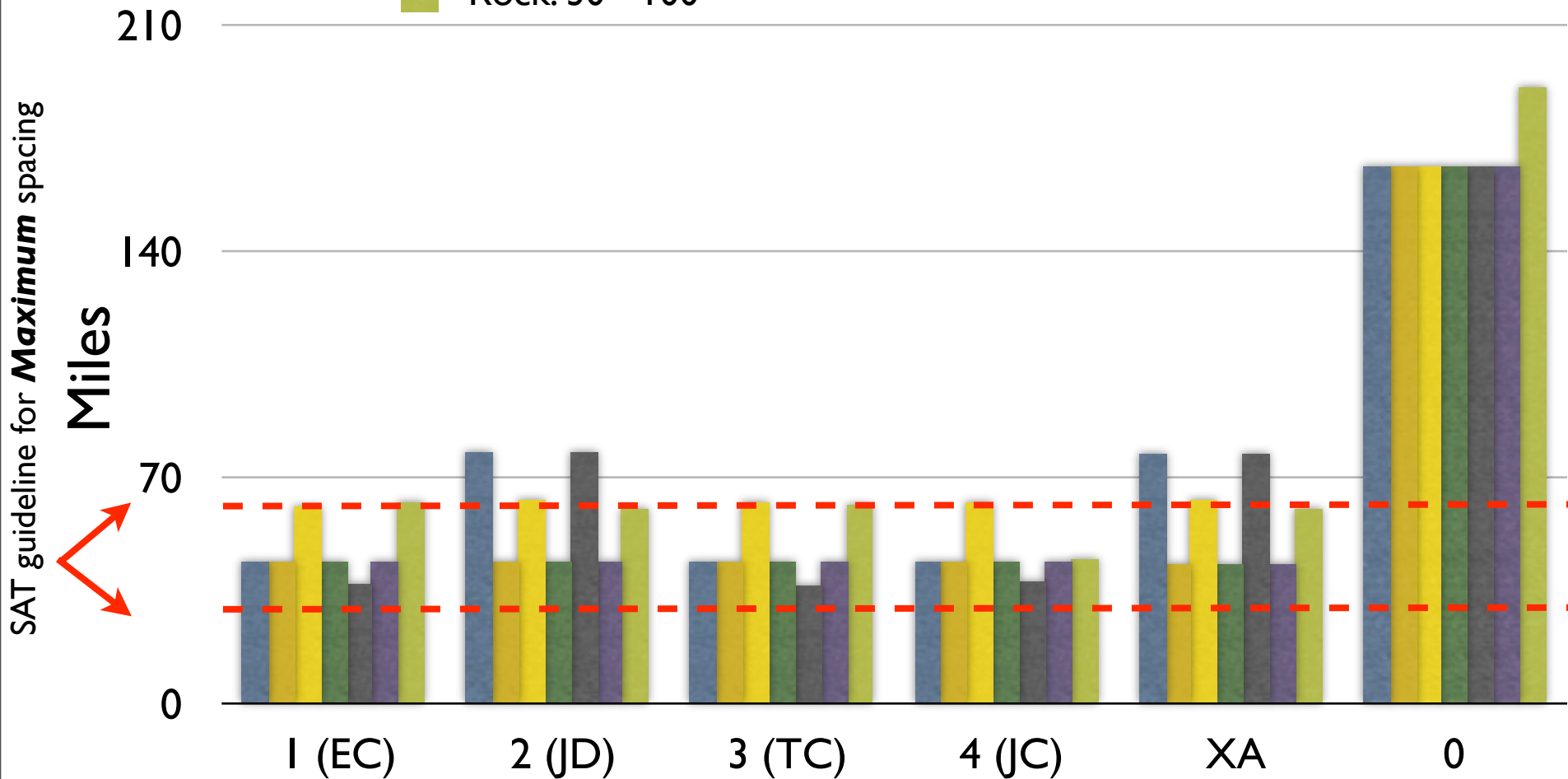
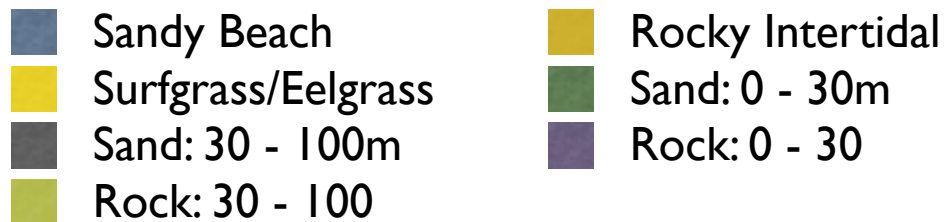


Maximum Gaps (High Protection)



Maximum Gaps

(Moderately High Protection)





MPA Spacing Conclusions

With **Very High** of Protection:

- Pkgs 4 and 3 were close to meeting the spacing guidelines for all habitats except deep sand.
- Pkgs 1, 2 and A greatly exceeded the spacing guidelines for all habitats. In this group, the maximum gaps for Pkg 1 were consistently smaller than those for 2 and A

With **High** Protection:

- All patterns remain unchanged *except*: Pkg 1 now meets the spacing guidelines for all habitats except sandy beach and deep sand.



MPA Spacing Conclusions

With **Moderately High Levels of Protection:**

- Pkgs 4, 3 and 1 meet the spacing guidelines for all habitats. Maximum gaps are in the middle of the recommended range for most habitats.
- Pkgs 2 and A meet the spacing guidelines for all habitats except two: sandy beaches and deep sand.

Replicates Per Habitat

(Very High Protection)

[illegible]

Replicates Per Habitat

(High Protection)

[illegible]

Replicates Per Habitat

(Moderately High Protection)

[illegible]



MPA Spacing Conclusions

With **Very High Levels of Protection:**

- Pkg 4 has the highest average number of replicates across the habitats. It averages 3.5 marine reserves per habitat.
- Pkgs 3 and 1 have an intermediate number of replicates.
- Packages 2 and A have no reserves in any habitat that meet the minimum size guidelines.

With **Lower Levels of Protection (High or Mod High)**

- The number of replicates increases in all packages.
- The rank order of the packages remains the same.